THE WESTERN FARMER,

DEVOTED TO AGRICULTURE, HORTICULTURE, AND RURAL ECONOMY.

Vol. I.] Cincinnat , June, 1840. [No. X.

Rotation of Crops.

It is a curious fact in the action of vegetable poisons, that a plant may be killed by the poison which it has itself secreted, as a viper may be stung to death by its own poison. Hence it has been very generally noticed, that the soil in which any particular plant has grown, and into which it has consequently discharged the excretions of its roots, is rendered noxious to the growth of plants of the same or of allied species, though it be quite adapted to the support of other species. This fact is of the greatest importance in an economical point of view, as the whole theory of the rotation of crops may be considered to depend upon it. The discovery of this important step in agriculture is said to have been made by the Belgians, at least they have the merit of having developed the theory of it. Formerly it used to be said that the whole secret of good husbandry consisted in ploughing well, and manuring well; but to these must now be added the equally important act of so arranging the cultivation of different crops that they may mutually assist each other, and thus enable the farmer to obtain the greatest possible annual return from the same land. The whole theory depends upon the fact that all plants succeed badly upon lands which have lately borne crops of the same species as themselves, or even of the same genus or of the same family. This effect is not owing to any exhaustion of the soil that must have taken place during the growth of the previous crop, but arises from a corruption of the soil, by the intermixture of vegetable excretions given out at the root, which are always more injurious to plants of the same kind than to others. It is even ascertained that the excretions of some plants are beneficial to the growth of others of a different family; the leguminous for example, as the pea, bean, &c. improving the soil for the grasses. Agriculturists have proposed various theories to account for the beneficial results obtained by a change of crops. Some have supposed that one species, by its denser foliage, chokes the weeds which otherwise would spring up and assist the crop in exhausting the soil; others have attributed the improvement that has taken place to the remains of the previous crop, which they suppose may have acted as manure; a third have said, that the roots of different crops extend themselves to different depths, and so extract their nourishment from portions of the soil which do not interfere with each other; and lastly, it has been urged that plants of different families may possibly derive their nourishment from different materials. It may be true that some of these causes have a certain degree of influence in determining which may be the most proper plants for a rotation, but they can only be considered as of very secondary importance when compared with that which relates to the deterioration of the soil, by its intermixture with the radical excretions of a previous crop. De Candolle, a famous French writer on the physiology of plants, after enume-

rating some of the collateral circumstances which should direct the judgment of cultivators in selecting such plants as may be best adapted to follow each other in any particular district, proposes the following fundamental and physiological principles, which ought to be attended to where complete success is to be expected. *First*, a new crop ought never to succeed another of the same kind, unless under some very peculiar circumstances, as where the soil is annually renewed, or where it is naturally so fertile as to be capable of resisting the inconveniences which ordinarily result from such a system. *Secondly*, a new crop ought not to succeed another which has been raised from plants of the same family. *Thirdly*, all plants with acrid and milky juices injure the quality of the soil, and their remains should never be buried after the removal of a crop. *Fourthly*, plants with sweet and mucilaginous juices improve the soil for others of a different family. The chief of these are the *leguminous*, which are commonly adopted in practice for this purpose. It would be a very desirable thing for the agriculturist to study botany more zealously than he has hitherto done, and perhaps than it is possible for him to do, this subject being left more properly for the agricultural schools to do, if the wisdom of the legislatures will assist us, as they ought, in establishing them.

Wounds of Trees by Pruning.

It is upon this that the whole success of pruning rests, and we shall the more willingly dwell upon the subject as it is one which has lately given rise to considerable discussion, it having become a matter of doubt among some eminent practical and scientific men, the late lamented Judge Buel amongst the number, whether the old system of close pruning has not been productive of immense damage to our orchards as well as to our forest trees, and whether it ought not to be entirely laid aside in favor of another system, which has been termed "fore-shortening." These enquiries appear to have originated from an examination of the effects which are always produced in wood when a branch is cut off close to the trunk of the tree; and it is rightly asserted, that whenever this has been done, a complete separation takes place between the old wood and that which has been formed over the wounded surface; and that in many cases, though by no means in all, decay and rottenness has been introduced to a greater or less extent into the very heart of the tree. Where the pruned branch is large, the blemish thus introduced is proportionably great, and must always diminish the health of the tree, even though it should not have caused the introduction of any rottenness. But although such, it must be allowed, are undeniably the bad effects of close pruning, it does not seem to us to follow that the proposed alternative of fore-shortening is any way preferable to it, and we shall first consider the mode in which all wounds are healed over, and then examine the question whether the damage produced by fore-shortening is more likely to be counteracted by the subsequent efforts of vegetation than those which are introduced by close pruning.

Wherever the stem is wounded by the removal of a portion of the bark, and the wood becomes exposed to the action of the atmosphere, a double influence is exerted in gradually decom-

posing its texture; one arises from a union of its carbon with oxygen, as in the ordinary process of decomposition; and the other from the moisture by which it is penetrated, dissolving some parts of the tissue, and in reducing it generally to a soft and disorganized state. These results will of course be very different, according to the nature of the wood attached, and to the length of time that the wound requires to be healed over. As soon, however, as the wood is secured from further exposure to the air, the damage ceases to increase, though the blemish which has been introduced admits of no remedy. The new wood and bark which form over the wound, are derived from the growth of the alburnum and liber, which gradually extend themselves from its upper edge, and from along each side, till they meet in the middle, and then unite and blend together as in the case of grafting. Various composts are useful for protecting the exposed surface from the atmosphere, whilst the healing process is in progress; but nothing of an oily or poisonous description should be employed.

Wherever, therefore, pruning is absolutely necessary, it is advisable to prune close, in order to reduce the exposed surface to the condition of a vertical wound, unless indeed the limb be very large, when it may be more advisable to prune at some distance from the trunk, lest the blemish which would be introduced into the timber should be so considerable as more than to counterbalance any advantage that would be obtained. There is no direct means by which a transverse section through the wood may be healed over, and if a branch be lopped at a distance from its point of union with a main branch, or with the trunk itself, the exposed surface never heals over, but causes the decay and death of the branch for some distance back, until this is stopped at some spot where the returning sap is in sufficient growth to produce fresh wood and bark. The system of fore-shortening rests upon the gradual decay of the pruned branch, until it be ultimately killed by the increasing shade of the superior branches, when its fall will take place in the natural way, as in all branches which grow low upon the stem, and are early stifled by the shade of the upper branches, and which slough off without producing any very marked blemish in the heart of the tree. Here, however, we must observe, that there is no process for "sloughing off" the decayed parts of vegetables which at all resembles that which takes place in animals; but when the branch has become so completely rotten, as to fall off upon the slightest force, it will be found that the new bark and alburnum which are formed round the base of the stump always envelops more or less of the rotten wood, which forms a rough and jagged surface to the wound. It is erroneous to suppose that those branches which fall off by a sort of natural pruning, resulting from their being killed by an obstruction of light, leave comparatively little or no trace of their decay in the heart of the tree; but since it happens that those branches which perish early are always proportionably small when compared with the bulk to which the trunk attains, the blemishes which they leave may easily be underrated, and this we believe to have been the origin of the error which supposes that the blemish introduced upon the natural decay and fall of a branch is, other things being the same, of less

consequence than that which results upon close pruning it. The danger that attends all pruning may be diminished by paying attention to a few rules, such as cutting the surface quite smooth, cutting it obliquely so as to prevent the wet from lodging upon it, and especially by cutting close to the main branch or stem. The main object is to procure a rapid developement of the new wood, in order that the exposed surface may be secured as speedily as possible from the action of air and moisture; and this, we believe, is best obtained by reducing the cut as nearly as possible to the condition of a vertical wound in the stem. All pruning, then, should be avoided as much as possible, but when it is absolutely necessary, it should be performed as soon and as completely as the young plant or branch may bear it with safety.

For the Western Farmer.

Agricultural Reading.

If a man has but one acre of land, a garden, or even a cow, and can raise a single dollar, he cannot put it to a better use than to procure an agricultural newspaper; next to the Bible, such a work ought to be in the hands of every farmer, or every one who intends to become one. No man in his senses ought to reject useful information relative to the culture of the soil, if offered by those in the smallest degree competent to the task; and how much greater his advantage, when the counsel and experience of practical men from all parts of the country are thrown together in the pages of an agricultural newspaper, and laid before him. Here he has the wisdom of a "multitude of counsellors" in which there is safety, and can listen to their interesting deliberations every month, and profit by them if he will.

There are, however, those who have an honest conviction against what they call "book farming," simply because they suppose it consists in mere *theory*—what *might* possibly be done, and hence reject all reading on the subject as of that character. But others have proved their practical utility, because they combine and illustrate the experience of practical men—showing what has actually *been done*, and what *can* and *ought* to be done. Among the best and the most intelligent farmers in the land, are always found the best patrons of agricultural newspapers; go where you will, through the best farming districts of any state, where the land is in the highest state of cultivation, and domestic economy is all regulated in perfect order, and you will invariably find agricultural newspapers there, and intelligence to appreciate them. But they are seldom met with where universal neglect and ignorance prevail; now this is not *theory*, these remarks are not based upon interest or mere imagination, they are the result of actual experience and observation, derived from years of constant travel through a great portion of these United States.

We have learned that there is not a subject, whether religious, political, or commercial, that interests the attention of man, which absolutely admits of a greater improvement, or a more boundless variety, than the cultivation of the soil. Vast improvements are in progress, and will yet be made to an almost infinite extent; the agriculturist is at this day only in the infancy of his better plans. This can hardly be said of any other enterprise in the country; all have outstripped the improvements in husbandry; the slumbering energies of the farmer, however, are waking up, and *agriculture*, the broad foundation of a nation's prosperity, is unmantling some of the brightest features of her hidden glory. And adopting the remark that "knowledge is power," we apply it in the language of an able pen, to the concerns of the farmer. "Knowledge is a species of capital which is found of great value in the absence of more available advantages. Some far-

mers may fail for want of sufficient capital, but more for want of sufficient knowledge. There is no class who place more entire reliance on their own skill than farmers, yet they who know them best will be the most ready to admit that the greater number are far from having acquired a correct knowledge of their business; and no one who is acquainted with the general agriculture of the country will assert that it has yet reached the degree of perfection of which it is susceptible. Regarded nationally, the intent of cultivation is to obtain the greatest possible amount of produce from the soil; the farmer's object is to raise it by such means as will afford him the largest profit with the least labor, and there can be no doubt, that the more scientifically he proceeds the more effectually will both objects be gained.

Husbandry is an occupation of boundless variety, extending to more objects, and fettered by fewer positive regulations than any other. Not only do different systems prevail in different countries, but in different provinces of the same country; in some they are dictated by peculiarity of soil or climate, while in others they have arisen out of local habit, or they spring from improvements that have not been generally disseminated, and even in the rudest districts there may be some which merit attention. Now it is quite evident, both that some of these systems must be preferable to others, and that no man can determine which is best without being acquainted with all; nor can any farmer be said to be completely master of his business until he has attained that knowledge. And how can he better or more readily obtain it than when those different systems, modes, and improvements are presented to him in the pages of an *agricultural* journal? It is not sufficient that he already gets what he considers a fair return for his capital and industry, if by other modes of culture he could obtain more; and if he neglects them he injures himself, his family, and the public. He may be satisfied with the present yield of his crops, taking his neighbors as a standard, but if by any other method, not more expensive, he can grow five bushels more to the acre, it is certainly his interest and duty to adopt it." GREEN GROVE.

March 30, 1840.

Silk Prospects.

WE hope none will accuse us of enthusiasm, when we here record our firm conviction, that the cultivation and manufacture of silk, will, within the next ten years, become one of the American staples. The speculation in the *morus multicaulis* having ceased, there is now nothing of magnitude to prevent those energies which were before naturally directed to the acquirement of great and immediate profits, from running into the surer and safer channels of fair and even high remuneration for labor. We have not been at all surprised to observe numbers of people who have never had any opportunity of becoming very conversant with the general affairs of agriculture, the nature of our climate, or the particular details of the business of silk, attempt to ridicule an undertaking which, in point of importance, is hardly inferior to the cultivation of cotton. This is only what we are in the habit of hearing every day on many other subjects from persons to whom it is much more easy to pronounce judgment than to take the necessary trouble to arrive at conclusions deducible from just premises. Neither the attention paid to the science or practice of agriculture, nor to that of the general education of the people, by those whose duty it is to pay attention to these things in their representative capacities, warrant us in the expectation of finding correct opinions on any of these subjects among the various grades of know-

ledge and intelligence of which, even in the freest country on earth, society is of necessity, for want of these things, at present composed. And so it will ever be until the people shall have good sense and knowledge sufficient to determine them to support such men only as will promote the fundamental interests of the country, viz. agricultural and general education, either apart from one another, or what in our opinion would be better, combined together. But it has always been the misfortune of the farmers, that from their living so separate from each other, by the very nature of their occupation, it has never been easy for them to form that concert of action so requisite to success in any great conventional undertaking. With regard to the ultimate success of the silk business, in such a state of things, we do not look forward to its accomplishment, or indeed, to any other great agricultural improvement, from any other source than that of the enlightened and zealous, and what some would call it, enthusiastic spirit of some few enterprising individuals. We are happy to say, that we have a few of such patriotic spirits in our neighborhood, those who at least promise the interests of the public to go hand in hand with their own, (a rule to which there are lamentably many exceptions,) who are now engaged, at first as is generally the case, with some self-sacrifices, in carrying on the occupation of cocooneries, reeling, &c. &c. We now have the pleasure of publishing an article from Mr. Wm. Price, of Cincinnati, addressed to the Cincinnati Chronicle, on the subject of silk culture in Cincinnati. With nothing else will we have any dealings but *facts*, particularly in an operation against which there at present exists so much prejudice in the minds of the public, as in this as it is generally regarded—but most erroneously we are convinced—silk chimera.

Mr. J. B. Russell—Dear Sir:—Agreeably to your request, made last evening, I proceed to give you a brief sketch of my silk operations the present season. You are aware I was interested in a small experiment last year, but which, from untoward circumstances, did not afford satisfactory results. Not discouraged, I determined to be better prepared this season if possible. To have early foliage, as well as to test the oft repeated assertion, that the morus multicaulis will not support the severity of our winters, I allowed one half of my trees (about 12,000) to remain out unprotected. Most of them survived uninjured, and yielded foliage for feeding early in May.

On the 24th of April, I took three ounces of eggs of the mammoth white, from the ice-house, and after keeping them two days in a cellar, placed them in the parlour to hatch. They commenced hatching on the 10th of May, and finished on the 18th. They were obtained from Mr. Ripke, near Philadelphia, and hatched well; they were fed with cut leaves, five times a day, and commenced spinning on the 15th instant, and are now all mounted. The product is not yet ascertained, but the cocoons are generally large and firm. Slight indications of disease occasionally appeared on some of the shelves, but were immediately arrested by the use of chloride of lime in solution freely sprinkled over them.

A second parcel of three ounces of eggs was taken from the ice house on the 24th of May, and commenced hatching on the 2d instant. About 500 of them were put on a table by themselves for the purpose of an experiment. It was conceived that if moisture and consequent fermentation of the litter could be prevented, it would obviate the necessity of frequently removing the litter. To effect this the use of air-slacked lime was resorted to,

sprinkling them freely with it, before the last feeding in the evening, and using more of it than will probably be necessary or advisable in future in order to discover any injurious effects, if it could produce them. Those thus treated soon outstripped, in size and vigor, those of the same hatching treated in the ordinary method, and are now going into their fourth and last moulting, whilst the others of the same age, and in every other respect treated in the same way, only came out of their third moulting yesterday. I have no doubt the former will spin at least a week earlier than the latter, thus saving one sixth of the time, and an immense amount of labor. There is also a great saving of animal life—of the former parcel few or none have died—whilst of the latter more or less perish at every moulting. So fully are we convinced of the advantages of this treatment, that we are now adopting it for most of the remainder of the second hatching; and for all the third hatching of six ounces just completed. The lime seems to act in the double capacity of an absorbent and a gentle generator of caloric, and to this latter quality I am disposed to attribute the immediate benefit, by its keeping up a more uniform temperature through the night. If the use of this article should, on further experiment, be found to answer expectations, it will establish the silk culture in this country on as sure a foundation as the raising of swine or any other stock—the difficulty heretofore being the liability of the worms to contagious diseases which if not promptly arrested soon destroy the crop. I will keep you occasionally informed of the progress of the experiment.

We have now arrived at that stage of the business when it becomes necessary to make some disposition of the product of these interesting animals. I presume we have about twenty bushels of cocoons on hand, but not yet gathered. The two crops hatched should produce about eighty bushels more, and having an ample supply of foliage from 12,000 old trees and from the product of 12,000 more planted this spring, and now in a very thriving state, it is my intention to make two or three hatchings of six ounces, or 200,000 eggs during the present season. These, if successfully raised, should produce 300 bushels of cocoons, or 300 pounds of reeled silk. Must the Queen of the West send her raw materials to Dayton, or Wheeling, or Mount Pleasant to have it manufactured? or is there sufficient enterprise among her citizens to assist in the establishment of a small filature sufficient to prepare the silk produced in this neighborhood? The necessary expenditures would not exceed five hundred dollars; which would be sufficient to purchase reels and twisters, and to pay cash for small lots of cocoons. For the reeled silk I am assured by Mr. Liebeau, who consumes a large quantity in his fringe and lace manufactory, on Third-street, he would be a ready purchaser for any probable amount we could produce if prepared in good style, and if not, there are several silk weavers in this place and vicinity, who are only waiting the production and preparation of silk to engage in the weaving of different fabrics, to whom it could be sold, or who could be employed in the weaving.

You will see by the May number of the Silk Journal, published by G. B. Smith, at Baltimore, that such a filature has recently been established in Philadelphia by joint stock association, which is in successful operation on a capital paid in of only $300.

Would it not be well to re-open the subscription list of the Cincinnati Silk Society, for which a charter was obtained in 1839, and organized by us about a year ago? A small additional subscription would accomplish the object in view. In anticipation of some such movement on the part of the public—or if not, determined to carry on the production and preparation of silk as far as practicable with my limited means, we have placed one of our daughters in the Philadelphia filature, where she will remain three months, during which time she can become an

accomplished reeler, and be capable of instructing others—and I am fitting up a portion of the building connected with the cocoonery, for the accommodation of reels and twisters; but the want of a little ready money will prevent my getting it into operation as soon, or in as good a style as would be desirable.

My cocoonery is under the immediate care of Mr. Julius Faxon, who has had several years' experience in feeding worms, assisted by Mrs. P. and my younger daughters.

Yours, very respectfully,

Wm. Price.

Prospect Hill Cocoonery, June 23, 1840.

P. S. For stifling the worms, I propose adopting the plan recommended and used by Mr. Chaussier, as described in the *Dictionnaire de l'Industrie.* It consists in coating the sides of a clean cask with spirits of turpentine. Then cover the bottom with paper dipped in the same, on which spead a depth of eight inches of flossed cocoons; cover these with another layer of paper, moistened with turpentine; then another layer of cocoons as before, and so on, alternately, until the cask is filled—when the head should be put in, or otherwise closed tight with plank, straw, or old linen. In twenty-four hours the chrysales are stifled. The cocoons may then be removed and kept any length of time in a dry place without any fear of their being attacked with insects. Cocoons thus prepared are said to preserve their freshness and consistence any length of time. Mr. Chaussier kept some eighteen months, and then reeled them with great ease.

W. P.

Remarks on the General Principles of Husbandry.

Agriculture, like every art, is founded on principles, and a natural method of studying it would seem to be, to begin with principles, and from thence to deduce the rules of practice. The nature of the subject, however, or rather the state of our knowledge, admits of this course being followed only to a limited extent; for the act founded on experience is often better understood than the principles, and while the science is in some degree incomplete, the art has in many things been rendered very perfect by experience alone. Hence it is well to lay the foundation of the study of agriculture on a knowledge of practice. In this case the agriculturist, should he desire to extend the range of his observations to the relations of the sciences with the practical art, will do so with a more useful result, and less hazard of error.

The theory of agriculture is built upon the following fundamental principles, and with one or other of them every part of rural practice is more or less connected. *First*, that the soil ought to be kept dry, or free from all superfluous moisture. *Secondly*, that it ought to be kept clean, or in other words, free of noxious weeds. *Thirdly*, that it ought to be kept rich, or in other words, that every particle of manure, which can be collected, ought to be applied, so that the soil may be kept in a state capable of yielding good crops.

We subjoin the following principles on the rotation of crops, hardly inferior to the three first, from the Farmer's Cabinet, Philadelphia:—

1. Whatever may be the nature of your soil, and situation of your farm, remember, that there is no soil so good, but it may be exhausted and ruined by bad tillage, and that there is none so bad, that cannot be rendered fertile by good tillage, even barren heath, if it can be ploughed and swarded.

2. The true art of husbandry consists in suffering no crop to grow upon your land, that will so far exhaust your soil,

as to lessen the value of your succeeding crop, whatever profit such a crop may afford you.

3. To avoid this, suffer no one crop to grow two years successively upon the same piece of ground, excepting grass and buckwheat, without the fertilizing aid of rich manures to support the strength of the soil; and even then, a change of crops will generally do best, excepting onions, carrots, and hemp.

4. Every plant derives from the earth for its growth, such properties as are peculiar to itself; this plant, when followed successively for two or more years upon the same ground, will exhaust the soil of some of those properties peculiar to itself, without lessening its powers to produce some other plants. The fact is most striking in the article of flax, which will not bear to be repeated oftener than once in seven years, and is common to all crops with the exception of those noticed above.

5. To avoid this evil, arrange your farm into such divisions as will enable you to improve all the variety of crops your lands may require, in such regular succession, as to form a routine of five, six, or seven years, according to the nature, quality and situation of your farm.

6. This method will make poor land good, and good land better. Try and see.

For the Western Farmer.

Care of Fruit Trees.

Maple Grove, Brown Co., O.
March 28th, 1840.

Mr. E. J. Hooper:—Sir, I have just finished trimming and scraping the moss off my apple trees, for their benefit, and preparatory to liming them. I intend putting on the lime the middle of next month, or a little sooner; putting it on now would render it too liable to be washed off by the spring rains; putting it on then, or later, will prevent the ascent of such insects as prey upon the flowers, young shoots, and fruit, and is very beneficial to the health and growth of the tree. And what of all this, to you, or any one else? Why, I wish it published in your Western Farmer, in order that it may profit any one having faith in the theory, and adding to his faith a suitable practice, for so it is.

> "Nor flint, nor steel, *alone*, produces fire;
> No spark arises till they both conspire.
> Nor faith *alone*, nor *works* without, is right,
> Salvation rises when they both *unite*."

The application is universal.

I have, sir, from a boy, loved good fruit, and do yet; and have, and do yet take pleasure in nursing fruit trees; and though some might laugh at the idea, I love good fruit better than the cultivation of the tree. Yet if I could procure *stone*, or *rock*, limestone is best, I would have something like a cart or wagon load put around each apple, peach, plum, pear, and cherry tree. For what? 1st. The limestone is manure itself. 2d. They greatly tend, by their attracting the intensity of the frost, in the spring season especially, to prevent the fruit from falling a prey to the frost. 3d. Through the winter months the stone prevents a degree of cold penetrating the roots of the trees, which might be injurious. 4th. The stone, in the spring season, when the earth is soft, and the winds high, holds, by their weight, the tree steady and firm, and from being upturned by the wind. And if the tree, especially one recently planted, be only loosened, its growth is checked. 5th. The stone prevents a sod of grass, or an army of weeds from growing around the tree, and robbing it of its needed supply of water. 6th. When the ground receives a shower of rain, the stone prevents its exhalation in a good degree; they also check the scorching heat of a summer's sun, which is sometimes injurious to young trees in sandy soils. If you can do no better, put a good sound heavy stone in among the limbs of your fruit trees, as conductors of the spring frosts; scythes, hoes, mattocks, chains, &c., will do as well. The stone or rock to be put round the trees, should be broken something like the size of bricks, or less; don't let them press the body of the tree.

B. Goldsberry.

Potatoes.

And what of potatoes? Why, they are an excellent vegetable, but like other vegetables, they soon fail to retain their flavor, after the spring commences. And how shall we remedy this matter with respect to the Irish potato? Simply by lifting them (as potato eaters say,) before they sprout, then wash them clean and put them into salt barrels; put them in a cool dark place, and the salt adhering to the barrels will completely kill the vegetative principle of the potatoes, and kept thus, after a few days, will neither grow out of the ground nor in it. If such barrels cannot be had, take any kind, put the potatoes in them clean and a little damp, and as you fill the vessel sprinkle on them a little salt, about the quantity or a little more than is generally found in barrels after the salt is sold out. The above plan is better than any other that I have heard of; the potatoes will retain their wonted flavor and continue good for all culinary purposes.

B. Goldsberry.

From the Journal of the American Silk Society.

The Grape Vine.

There are few things that afford more pleasure for the expense of time and trouble than a good well managed grape vine. From considerable observation the editor of this journal was led to conclude that a very erroneous practice was generally pursued in relation to grape vines; and three years ago determined to "try an experiment." The error in practice alluded to is this: the vine is permitted to grow to the full extent of its ability, and thus every season a large portion of wood has to be cut off and thrown away. It occurred to the writer that this waste of power of the plant might and ought to be prevented. Accordingly, in the spring of 1837, he obtained an Isabella vine, one year old from the layer, having a very good root, and planted it in an ordinary soil, of rather a sandy quality, putting a wheelbarrow load of wood yard manure and old lime mortar about the root. As soon as it began to grow, he rubbed off all the buds but one, and trained that perpendicularly, rubbing off during the season all the side shoots, and when it had reached to the top of the second story balcony, nipped the end off, thus stopping its further growth. In the spring of 1839, he rubbed off every bud but two at the top of the vine, and trained these along the front of the balcony, having stretched a long wire along the posts for their support. He rubbed off every side bud during the season, as at first. Both shoots made about thirty-five feet of growth this season. In the spring of 1839, every joint on the horizontal shoots were permitted to send forth its buds, and grow unmolested, till the branches had fairly set fruit, generally until they were about eighteen inches long. Then the end of each branch was nipped off, and its further growth prevented. The perpendicular stem was carefully watched, that no more buds might be permitted to grow—each one being rubbed off as soon as it appeared.

Thus from about the middle of June, the vine was not permitted to form any new wood. During the season the grapes grew uncommonly well, and every one ripened in good season, and were very fine, as was proved by the numerous company at the Horticultural Society exhibition, who unanimously pronounced them the finest grapes there. The produce of the vine was *three hundred and fifteen bunches*, all very large, and the berries of uncommon size. The society awarded to them its first premium for native grapes. Almost every body, however, doubted whether the plant had not been injured by this excessive bearing of fruit; and many old gardeners considered that it would be killed by it. The writer doubted on this score. He had only compelled the plant to *make fruit*, instead of wood to be cut and thrown away, and has no doubt that if he had been able to get the season before, a greater length of wood for fruit branches, the plant would have supported a much larger quantity of fruit. On trimming the

vine, preparatory to its bearing in 1840, there was very little wood to be cut off. Only two buds were left on each branch of last year's growths and these are now growing and showing fruit buds very finely. The vine is not dead, nor does it appear to have been injured in the last year's hard work. So far, the experiment is beautifully successful, and we now feel authorized to recommend this plan to all who love fine fruit.

It must be borne in mind that the experiment was made with the Isabella grape; we of course cannot say any thing about its practicability to other kinds from *experience*, but the same reasoning applies with equal force to all kinds. If the powers of a plant can be turned from the formation of wood to that of making fruit, as we have proved it can be in the case of the Isabella grape, we do not see any reason why the experiment may not be successful with all kinds of grapes and fruit. One thing we do know, that a plant that bears fruit does not grow as much as one that does not; and we are hence authorized to infer, that the power of the plant may be directed at pleasure, either to the growth of fruit or of wood —that by suppressing the one, you may increase the other, to a very great extent. The vine above described has attracted the attention of numerous persons, and many have determined to follow the example. It may be observed that this vine occupies no room at all in the garden. It grows close in the corner of the house, a single stem ascending four feet to the balcony, when it starts off horizontally, as above described, along the balcony. Thus every house in any city that has a yard at all, so that the vine may be set in the earth, may have just such a supply of delicious grapes as the writer of this had last fall.

From the Franklin Farmer.

Sowing Grass Lands.

Dear Sir:—In my letter to you of April 2d, and of which you have been pleased to speak in terms of commendation, I endeavored to detail to you my experience in the cultivation of grass in woodland. On that subject I do not know that I can add any thing of interest. I wish now, however, in the same rambling way, to communicate a few thoughts on the subject of grass in other locations, and as I proceed, may occasionally drop a hint on matters not apparently very relevant, but the utility of which will be perceived by those who read for information.

I have described to you the best plan of converting native woodland into woodland pastures. The modern system of grazing, however, requires more and better grass than can be furnished in woodland, and to change an ordinary farm into a stock or grazing farm, requires much judgment and experience. If the object be to make a grazing farm out of a common one, the fields intended for cultivation should be selected from such of the arable lands as are least subject to wash, and should be thrown into as good form as possible, and to be of such dimensions as shall correspond to the size of the whole farm. The broken points of land and that which is worn out, should be permanently set in grass; to do which, the same plan is to be pursued as is directed for woodland, with this difference, that the quantity of timothy and clover seed must be increased. The number of acres designed for cultivation must be double or even treble of that which is each year in actual cultivation, so that one half at least may be in grass, while the remainder is under the plough. All feeding, except that which is done in the stable, and in setting other lands in grass, must be done on that portion which is in grass. The practice of feeding along branches, or on rocky hill sides, or in public roads, is very much to be reprobated, and should never be adopted. Even hogs ought not to be fatted at springs or spring branches, as is often done for the sake of water; because all this is an entire waste of manure. In fatting hogs, let some spot of their land

intended for cultivation be selected and enclosed for the purpose, and if water cannot be got otherwise, let it be hauled, and the improvement of the ground will be full pay for the labor of hauling. In this way the farmer has all the manure and litter of his stock just where it should be, and when that portion of the land in grass, and treated thus, becomes sufficiently resuscitated, let it be put under cultivation, while such as has been exhausted by cultivation is to be put in grass and passed through the same process.

When land is frequently changed from plough-land to pasture, and to plough-land again, blue grass is not used, because it is a kind of grass that requires several years to obtain such a set as to be profitable. Timothy and red clover are most suitable for this purpose, and may be sown any time between August and April. I think September is the most favorable month, unless the fall is very dry. It may be done at this season, with or without small grain, and should be lightly harrowed in. Very late fall sowing is apt to freeze out. The time most practised is February or March. If the land on which the seed is sown was in corn the year previous, and not sown in small grain in the fall, the grass seed ought to be harrowed in or tramped in by stock. Clover and timothy may also be sown in the spring with oats. But of all the methods known to me, or which I have tried, I greatly prefer feeding hay, with the right seed over the ground, whether the land is in small grain or not, for if small grain has been sown, advantage may be taken of a hard freeze, and the grain will not be injured, or very little, if at all.

For the present, let this suffice, and I promise you to continue these letters so long as there is a prospect of my being able to communicate any thing of interest to any of the readers of your paper. Very respectfully, &c.

W. P. H.

A wise government will not be slow in fostering the agricultural interests.

From the Cultivator.

Management of Milch Cows.

I have read with much interest the remarks of your able contributors on stock, and especially on milch cows; yet there is one particular in the management of milch cows which seems to have been passed over unnoticed—that is, *milking*. Perhaps there is no one point of dairying treated with so much neglect and indifference, and attended with as great loss to the dairyman as milking. Not more than twenty-five years ago, it was considered a good lot of cows to produce two hundred pounds of cheese to the cow on an average, and the farmer who obtained that was a skilful dairyman; and even at the present day, many keep along in the same old track, doing well enough as they term it, while others obtain five hundred pounds, and some have gone as high as six hundred pounds and over, besides a good quantity of butter. How is this difference to be accounted for? One reason I would give, is milking. A cow, to give a large quantity of milk, should have one steady hand to milk—one that can draw the milk quick and easy; care should be taken to milk the cow perfectly dry (or in other words clean.) Another important object is to milk at regular hours. In long days, cows should be milked and turned to the pasture before sunset, that the time between milkings may be nearly equal; yet the practice with some is to work in the field as long as they can see, then drive up the cows and have them milked by inexperienced hands, and those too who take no interest in the business; then leave them in a close yard during the night. I have always noticed that those who make an odd job of milking, never realize much profit from their cows. That there is a great difference in cows, I will admit, though I think there is more in the management of them than in the quality; yet the farmer should be very careful in the selection of cows for the dairy. I find some of my best cows would be counted worthless if they had different hands to milk them,

and those, too, who are inexperienced in the business. I am often told by my neighbors that I have some peculiar method of making more cheese from the same quantity of milk than they; and it is true there may be something to be considered on this point; but I never as yet have found the secret of making butter and cheese without milk.

Another reason is, *good keeping*. Cows should be kept in warm stables, well littered, until late in the spring. The practice of letting cows lay out on the cold wet ground as soon as it is bare, is a bad one. They should be kept up and well fed, that they may be in good heart and high order when turned to grass. Salt should always be kept in troughs under sheds, that cattle can have it at their command throughout the year. Another fact of much importance is stabling cows early in the fall. As soon as cold storms come on they should be stabled, which will add one third to the quantity of milk. Stantials are to be preferred for putting up cattle, allowing each one three feet, and boarded between the stantials to keep the fodder from wasting; the stantial fastened at top by running through the upper timber and a long iron link, made to drop on the top, which by raising one end will loose the moveable stud of the stantial. Stable floors should be a little sloping, that a dry bed may be kept to keep the cattle clean and comfortable.

A. B. Cole.

On Stripping Cows.

WINTER PRODUCT OF A DEVON COW.

Every milkmaid has been cautioned that the last milk yielded by the cow at any one milking, is richer than that which is first obtained—but this is not the only consideration which shows the importance of thorough milking. The more there is left in the udder, the less will the cow give at subsequent times, and the sooner will she "go dry." After once going through the cow-pen, the milk-woman or man, (for in New-England the men milk the cows,) ought to be compelled to go round again and completely strip each cow.

The importance of this will be better understood if there be truth in the statement which we have lately read, apparently on good authority. We confess we were not prepared to believe that the difference was so great as there stated, between the first and last portion of the one milking. The statement is that

"Several large coffee cups having been successively filled from one cow, till she was quite dry; the following results appeared, great care having been taken to weigh the cups when filled, to ascertain that they held exactly the same quantity.

"In every case the quantity of cream was found to increase in proportion as the process of milking advanced. In different cows the proportion varied, but in the great number, the excess of cream in the last cup as compared with the first, was as *sixteen to one!* In some it was not so considerable, therefore as an average it may be called as ten or twelve to one.

"The difference in quality of the two sorts of cream was no less striking; the cream given by the first drawn milk was thin, white and without consistence; while that furnished by the last was thick, buttery, and of a rich color."

In the Philadelphia Farmers' Cabinet, we have the winter produce of a Devon cow; "Abraham P. Holdrich, of Spencertown, Pa. had an accurate memorandum kept of the butter made from a Devonshire cow, which calved last autumn. The result was that from the 10th of December to the 10th of January, including both days, there was made from her milk fifty-six pounds of well worked butter—nearly equal to two pounds a day. The cow was fed with roots, hay and buckwheat bran. Estimating it at twenty-five cents per pound, the butter made in the depth of winter was worth $14, and if we consider this the average product of eight months in the year, the aggregate amount for that period would be $112."

This shows the importance of keeping a good breed, and of keeping it well: like cultivating rich land instead of poor, it takes no more labor to milk and take care of a good cow than a bad one.—*American Farmer.*

Milk.

From careful experiments and observations made by Dr. Schubler, professor of chemistry, applied to agriculture, in the celebrated institution of Fellenburg, at Hofwyl, in Switzerland, he says, he found the morning's milk commonly to yield some hundredths more cream than the evening's, at the same temperature; and that in milking cows, this singular phenomenon is observed, that the milk obtained from one and the same milking, differs, considerably in quality: that contrary to what might be expected, the milk first extracted is not the best—but that which is obtained the last, contains invariably the largest proportion of cream. To satisfy himself thoroughly on this point, he caused a meal's milk of one cow to be milked into five vessels of the same size, and then separately examined the milk in each, in the order in which it was taken.

No. 1, or that drawn first,	gave 5 per ct.	of cream.
" 2,	gave 8	do.
" 3,	gave 11.5	do.
" 4,	gave 13.5	do.
" 5,	gave 17.5	do.

Making an average of the whole of 11.05. pr. ct.

He extended his experiments so as to test the quantity of caseous or cheesy matter obtained from different drawings of milk, which displayed a similar result—proving, in the most satisfactory manner, that the last drawings of the milk were constantly much richer, both in butter and cheese, than the first; and demonstrating in the most conclusive manner the vast importance to the farmer, of having trusty milkmaids, who will tug away as long as a drop of the precious fluid remains in the udder. *Farmer's Cabinet.*

Agriculture, aided by science, will make a little nation a great one.

From the Franklin Farmer.

Early Harvesting Wheat.

Sir:—As the wheat harvest is approximating, I feel it my duty to say a few words on the subject of harvesting that valuable crop. I have, for the last four years, cultivated about one half of my ground in wheat, and my time of harvesting has been about eight days earlier than my neighbors, and my experiment has been attended with the most signal success. Sir, I find that my wheat is fuller, larger and finer than my neighbors, who followed the old practice; and, sir, this is not all—the weevil, which sometimes commit such sad havoc upon the wheat crop, will not touch it, if it is cut eight or ten days sooner than the common time of harvesting. That it is advantageous to reap wheat before it is fairly ripe, my experiments have fully proved, not only to my own satisfaction, but also to my neighbors'. But in ascertaining the proper state, it is necessary to discriminate between the ripeness of the straw and the grain; for in some seasons the straw dies upwards; under which circumstauce, a field, to the eye may appear to be completely ripe, when in reality the grain is imperfectly consolidated and perhaps not much removed from a milky state.—Though it is obvious that under such circumstances no further benefit can be conveyed from the root, and that nourishment is withheld the moment that the roots die, yet it does not follow that grain so circumstanced should be immediately cut, because after that operation is performed, it is, in a great measure, necessarily deprived of every benefit from the sun and air, both of which have greater influence in bringing it to maturity so long as it remains on foot than when cut down, whether laid on the ground or bound up in sheaves. The state of weather also at the time deserves notice, for as in moist or even variable weather every kind of grain when cut prematurely is more exposed to damage than when completely ripened. All these things will be studied

by the skilful husbandman, who will also take into consideration the dangers which may follow were he to permit his wheat crop to remain uncut till completely ripened. The danger from wind will not be lost sight of by the judicious husbandman. Even the quantity dropped in the field and in the stack yard when wheat is over ripe, is an object of consideration. Taking all things into consideration, it seems most prudent to have wheat cut before it is fully ripe, as less damage will be sustained from acting in this way than by adopting a contrary practice. If the weather be dry and the straw clean, wheat may be carted to the stack yard in a few days, indeed, if quite ripe it may be stacked immediately from the sickle, especially when not meant for early threshing. So long, however, as any moisture remains in the straw, the field will be found to be the best stack yard. Yours, T. L. M.

From the Germantown Telegraph.

Superior Advantages of Growing Orchard Grass with Red Clover.

Read before the Philadelphia Society for promoting Agriculture, March 4, 1840, by James Mease, M. D., Vice President.

My attention was first called to this subject when reading the late Mr. Bardley's 'Notes on Husbandry,' (1799,) in which he states the benefits to be derived from the sowing together the two grasses first mentioned, and his remarks appeared so well founded in reason, that I was disposed to pursue the practice he recommended; but before trying the experiment, I consulted the late Algernon Roberts, of Philadelphia county, one of our best farmers, on the subject, and was pleased to hear him approve of the measure.

My question was, "Which was the best grass to grow with red clover?" He answered at once, "Orchard grass," by reason of their blossoming at the same time, and the orchard grass giving early and late pasture, which was a great object with him, as he devoted his attention to the supply of butter for the Philadelphia market. Joseph Cooper, of New Jersey, to whom I also applied for an opinion on the same point, was equally prompt in favor of the union of the two grasses in question. Thus backed, I had no hesitation in deviating from the usual routine adopted in Delaware, and still continued very generally throughout Pennsylvania; and upon the first field of wheat which I laid down, viz: in 1805, I had sown the following spring, 12 measured pints of clover seed with one bushel and a half of orchard grass seed previously well mixed. After the grain was removed I saw, with very great delight, both grasses thickly covering the ground, and nearly as high as the stubble; and late in the autumn had the satisfaction to see my cows enjoying a luxurious, succulent repast, after the fields, which were sown with timothy and clover in the vicinity had ceased to supply it. But this gratification was small, when compared with that I experienced the following spring, by beholding the towering orchard grass in full blossom at the same time with its companion, and the ground thickly set with both. Reserving a certain space for maturing the seed of the orchard grass, I had the crop cut when a few only of the clover blossoms were beginning to turn, being then sure of perfect maturity of the rest, and found that they, equally with the leaves, retained their connexion with the stalk much better than when the grass was cut after the clover blossoms had assumed a dark hue.—Another advantage attending this early cutting is, that the stalks preserve their pliancy, and are eaten freely by cattle; whereas they are wasted when they become hard from the mowing having been done at a late period.

My experience of six years of the union of the two grasses enables me to say that the advantages of sowing orchard grass in preference to timothy, are as follows:

1. Two crops in place of one.
2. Good pasture late in the autumn instead of none.
3. The curing of both grasses in full

perfection, while, when timothy is sown, the clover blossoms, and leaves are dead, black, and chiefly fall off in curing of the hay, owing to the ripening of the timothy from 12 to 15 days after the clover. Farmers will never cut their grass until the timothy is fit for the scythe.

4. Early pasture, even before the pestiferous, hateful wild garlic makes its appearance, or at least as early as the latter, and by its rapid growth, smothers or lessens the crop of this enemy to the products of the dairy. The same remarks apply to the autumnal growth of garlic.

Orchard grass is upon a par with timothy, in point of nutritive quality and of animal partiality, and will command nearly as great a price as timothy. Two crops, and the early and late pasture of the orchard grass make up for the small difference in the price of hay from the two grasses.

Pruning Peach Trees.

The trees should be *headed down* from the top to within, say six feet of the ground, every third season; they will then throw out more healthy and vigorous shoots, and produce more fruit. Young wood will be forced out (if the season is favorable) and the fruit will form upon the laterals, or second year's growth.

If peach trees are trained high, the lower limbs are exceedingly apt to die; the tops running up, being exposed to high winds, are frequently broken or split down to the very bottom of the tree. I consider the best season for pruning to be from the last week in May to the first in June.—*Salem Observer.*

From the Franklin Farmer.

Sheep.

You ask me how I have succeeded with my sheep? I have never despaired that sheep would, sooner or later, become an object of importance. But the market for wool has been too fluctuating and uncertain to justify going largely into the raising of sheep. I have heretofore endeavored, by selling, killing off, &c. to keep my flock within moderate bounds. I sheared, last spring, two hundred and thirty-six, of all grades from three fourths to full blooded—only three or four of the latter—the wool of which, washed on the sheeps' back, averaged me thirty-six cents per pound. I have bred for a number of years from common ewes (at the beginning) and full-blooded rams. My sheep last spring averaged three pounds and twenty-six hundreths of a pound nett wool, per fleece—about half ewes and half wethers—and produced one dollar and seventeen cents per head. Even at this price, sheep are much more profitable than cattle; as, upon the same quantity of land, and with less labor, you can raise twelve times as many sheep as you can of cattle. Steers at five years old, even stall fed and finely kept, will not average more than twenty dollars, perhaps not so much; but twelve sheep, in five years (if as fine as my flock) will produce seventy dollars and twenty cents, without counting any thing for *the increase* of the flock, or the value of the mutton, tallow, skins, &c., of those killed off. This estimate is founded upon my actual sales last spring. If the increase of the twelve sheep (say six ewes) including the value of those killed in *five years*, should be worth twenty-nine dollars and eighty cents (about two dollars and fifty cents annually) the whole proceeds would be one hundred dollars, and twenty annually. Now what stock of cattle would be required to produce annually the same amount, if kept solely for the purpose of beef? Say one cow and calf, one yearling. one two year old, one three year old, one four year old, and one five year old, the cattle to be sold off in the fall after five years old. Thus to be enabled to sell annually *one steer* or spayed heifer, you must constantly keep on hand six head of cattle, and this upon the supposition that the cow produces a calf annually, and that no casualties happen. To keep up the stock, however, and to allow for casu-

alities, you cannot calculate upon selling more than *one* for every *seven*, especially as you would have to encounter the risk of spaying the females. To be enabled to sell ten beeves annually at twenty dollars each, amounting to two hundred dollars, you must keep up a stock of at least seventy head of cattle. But sixty ewes and sixty wethers (allowing for the increase as above) will produce you the same sum; or one hundred and seventy-one sheep will produce that amount without allowing any thing for the increase. But if you could only keep *ten times* as many sheep as you can cattle, upon the *same quantity* of land, and with the same labor, then you could as easily keep seven hundred sheep as seventy cattle. Seven hundred sheep (supposing them as fine as mine,) would produce annually eight hundred and nineteen dollars, without allowing any thing for the increase; and allowing the increase, upwards of one thousand dollars, whilst the seventy head of cattle would produce you annually only two hundred dollars. In my judgment, then, sheep are a much better stock than cattle. Indeed, I am clearly of opinion that (except a few for butter and milk, and to feed the rough provender that every farm produces) beef cattle are the most unprofitable stock that can be raised. Indeed, I have found, even to this extent, the raising of cattle is so poor a business, at the present prices of beef, that it is better to let my straw lay and rot, for manure, than to raise cattle to feed it away, because of the quantity of pasture they consume, which might be more profitably fed to other stock. Entertaining these views, you will readily suppose I do not hold *cattle raising* in much estimation.

Wool will bear transportation to a distant market much better than any agricultural production of our State. It is well adapted to *all the States* that do not grow cotton.—Were we to manufacture all our cloths, blankets and other woollens, and to exclude foreign wool by a gradual prohibitory duty; there would, in a few years, be an *increased demand*, and consequently an *increased production* of wool to the amount of at least five millions of dollars annually, and the labor bestowed in manufacturing this wool would be a *creation* of wealth to the amount annually of seven or eight millions more, besides the immense advantages that would result to the various mechanics in putting up and repairing buildings, making and repairing machinery, &c. &c., and to the farmers by the *home market*, furnished for their agricultural productions. Language can hardly convey an adequate idea of the prosperity to which such a state of things would give rise. All this prosperity is within our reach, if we have but the wisdom to avail ourselves of the advantages that offer. Time alone will determine whether we are to become the most prosperous nation on earth, or to continue laboring under the depression and difficulties to which we shall ever be exposed, while we depend upon a foreign nation to manufacture for us the necessaries of comfortable sustenance, while she refuses to buy from us a pound of our flour, beef or pork. Yours, very respectfully, A. Beatty.

Raising Fruits and Vegetables for the Market.

There can be no doubt there is a great deal of judgment to be exercised by our farmers and gardeners, in having fruits and vegetables, so as to follow each other in convenient succession for market. For instance, to name a few things: first will come strawberries; then will succeed them raspberries, both the black and the red, (the red ripen first;) next there will be, just in the nick of time, generally early corn, or potatoes; after early corn and potatoes will come melons. Thus none of these will much interfere with one another, if they are so cultivated as to be matured as early as possible, particularly corn, potatoes, and melons—and

are on the right soil and with the proper aspect. Currants rather interfere with strawberries, besides which they are never so marketable, nor do they command so good a price, yet they are hardy and easily managed, growing pretty well on sward ground. What a field there is before the farmers living within any convenient distance of the market of Cincinnati, of taxing the citizens (instead of the citizens taxing them, a Rowland for an Oliver, by the by,) for fruits of all kinds, especially peaches, to the tune of about 20,000 to 50,000 dollars a year! If the men will be negligent about cultivating good fruit, we recommend the ladies to take hold of this business. Our climate is well adapted to the raising of all the valuable fruits. All may be obtained at a small expense, and a small piece of ground will yield a large profit, and when one raises fruit which is known to be good, it is far more valuable than that often called good, but which is too apt to make the mouth change from its accustomed expression to one not the most consonant with beauty.

But in order to have good fruit and healthy trees, we must be less negligent than we are in the habit of being, in regard to defending them from the injuries and depredations of noxious worms and insects. For instance, the peach tree must be dug round every spring and examined for the worm at the stem a little from the top of the ground—and boiling water applied—and we should apply coal or wood ashes in abundance there, or sand and sulphur, and the emptying of chamber utensils. The borer may be made to die by thousands by applying any substance about the roots of trees, that will stop the growth of grass and weeds, rendering the lower part of the body of the trees more dry and hard than when the grass surrounds them; but where the thick grass surrounds the body of the tree, the bark is kept tender and moist during the greater part of the time. The loose outer bark should be scraped off of trees, so as to leave as few crevices as possible for insects to find a lodgment in. A wash of lime, and perhaps cow dung, with a little weak lye, has a strong affinity for all animal substances, and of course is avoided by all animals. A few pecks of leached ashes is a good thing round the bottom of the tree in the form of a cone, so that insects cannot deposite their eggs in it. This should be done every two years for the sake of the benefit the fruit would receive from it. Every kind of fruit tree should be planted by itself in one or several enclosures, that hogs may be turned in to destroy the Curculio insect which makes great ravages among plum and cherry trees. Hogs will devour the fruit as it drops and the insects which it contains. We will revert to this *fruitful* subject again soon. In the meanwhile, we quote the following from the Boston Cultivator, on budding:

As there is a difference in trees, there is a difference in the proper season of budding. It is a rule not to insert buds after the tree has finished its growth for the season, and that time often varies two or three weeks. August is called the best month for budding, but pear trees ought to be budded in July. They stop growing sooner than the apple, the peach or the cherry. These three may be budded at any time in August, provided the summer is wet and their sap flows freely; but we think it safer to insert the buds in the fore part of August, if not in July.

Pear stocks are usually budded several feet from the ground because their

stocks are rough and the bark cannot easily be started near the root. Cherry trees should be budded high, if we bud them at all, for a like reason, and because we obtain a better and a larger tree by keeping as much of the seedling stock as possible.

We prefer not to bud the cherry at any time, for we find that most of our seedlings bear excellent fruit without it. And if the seedling proves a bearer of poor fruit, it may be grafted in its upper branches in the month of March.

We lose nothing by this course, for we find our seedlings,—our mazzards,—grow about four times as fast as those trees that have been budded in the nursery with the old or the early kinds of fruits.

The peach may be budded near the root when it is two years old, and then one bud will suffice; but it is usual to insert several buds in the branches when the stock is more than two years old, as the buds are in that mode more likely to live.

Apple trees may be budded, or they may be grafted, in the nursery; and some prefer to put off grafting until the trees have been set in the orchard. But it is decidedly better to bud or graft apple trees in the nursery while they are young. If we first set the seedlings in the orchard and insert grafts in the limbs, we delay the receipt of our profits, and we have not so strong a tree as when it springs from one bud, inserted in a thrifty stock, near the ground.

As to the mode of performing the operation, we could show our correspondent better, in one minute, with a knife and a stick as large as the finger, than by half an hour's description. The bud is first taken from the limb, and it may be one inch in length, the leaf-stem being midway from the ends. Some choose to peal all the *wood* from the bud, others leave a little to protect the eye. Next cut a perpendicular gash in the stock, one inch long, quite through the bark, then cut another across the lower end of the first cut,—start up the bark from the stock so as to insert the bud underneath it and slide the bud up until the leaf-stem touches the upper extremity of the gash. Then tie some bark, matting, or woollen yarn round the stock and the bud to exclude the air.

Some make a practice of sliding the bud down instead of up, and think it will be more likely to meet the sap of the stock, but as the sap *descends* under the bark we prefer to slide the bud up to meet it.

Barren or Worn Out Lands.

The texture of these lands may be such, that the moisture essential to vegetation cannot be retained, or that the fibres of the roots cannot penetrate in search of food. The first is the case in loose, gravelly, or flinty sands, the second in rocks or very hard clays. It is seldom that the two first kinds of soils can be rendered productive so as to repay the expense of cultivation unless under particular circumstances. The most barren sands will become productive by irrigation or leading water on to them, with the mixture also of some more tenacious earth.

Some lands are barren in consequence of noxious ingredients in the soil, which by chemical action on the food of plants, or on their minute fibres, prevent their growth and render them sickly and abortive. These having been ascertained by careful analysis, must be deprived of their noxious qualities by chemical means, one of the most obvious of which is burning or baking. Nature has supplied a general and complete antidote to acid combinations, in *lime*, one of the most abundant of mineral productions. There are few bad soils that lime (not the water lime, as it is called, which contains too much of magnesia) will not improve. The most common substances found in worn out or barren soils, are different combinations of metals, principally iron with sulphur and acids; quick lime either decomposes all these, or renders them harmless. Another substance is *tannin*, or the astringent principle, which is of vegetable origin, and by preventing the

solubility of vegetable fibres, transforms them into an inflammable substance, well known by the name of peat or moss. This, likewise, is readily corrected by the same means, and experience has proved that of all substances that can be obtained in sufficient quantities, *lime* of the proper kind is the most valuable as an improver of bad soils. But the different substances of which a soil is composed may be perfectly harmless to vegetation, and yet the barrenness may not be the less, if the supply or circulation of moisture be deficient or excessive. This must therefore be the first consideration before any improvement is attempted, and if sufficient moisture cannot be supplied, or superfluous removed, all other attempts will only be lost labor. In tropical climates, irrigation is the chief source of fertility, and the most expensive works have been constructed, both in ancient and modern times, to supply the land with water as occasion requires. In northern and moister climates like our own, the foundation of all improvement in the soil, is a proper outlet to superfluous water. This, as every body knows, is done by draining.

There are two methods, after grubbing, removing or burying large stones, (small rocks or stones are better left on broken land,) either by ploughing in the grass that may be on the land, or what is called paring the surface and burning the sods. Each mode has its strenuous advocates, and has been alternately praised and reprobated. A little consideration will soon, we think, settle this point. If the soil consists of clay or loam containing the yellow ore of iron, and if the ashes after the sod has been burned in heaps, are of a bright red colour, the effect of burning the surface will be generally advantageous, even where the soil is already deficient in vegetable matter; for the fire will do more good in correcting the crude qualities of the soil, than the small quantity of vegetable matter which is dispersed would have done, had it been decomposed in the most favorable manner. But if the soil is a sharp sand, and the ashes are white and loose, burning destroys the small portion of vegetable matter in the soil, without compensating the loss by any advantage, and in this case burning the surface is inexpedient. Roots and green crops should be began with to raise a quantity of manure by the stock fed on them.

Lime excites new land wonderfully, and no manure is more active, provided there be vegetable matter in the soil, or added at the same time. The lime renders the natural soil soluble and active, and if put on injudiciously, will soon leave none for future crops. Bone dust will raise a better crop of turnips than lime alone; but bone dust, or what is better, coarsely bruised bones, are chiefly of use in raising the first crop of turnips. As soon as the ground has by frequent tillage and manuring, become of a uniform and somewhat mellow texture, the first opportunity must be taken to lay it down in red clover and perennial grasses, and let it remain in pasture two or three years without mowing. When it is broken up it may be treated as the old cultivated lands of a similar quality usually are. If a well cultivated farm is near, and a sufficient quantity of manure can be raised upon it, by converting a portion of it into artificial meadows, or keeping it under green crops, so that an increased quantity of stock may be maintained, the land to be improved may soon be brought into a productive state, without robbing the old land to make the new, as is often done. Nothing has so rapid an effect in removing barrenness as the free use of urine of cattle and the draining of dunghills, collected and allowed to ferment in covered tanks or cisterns; but this can only be obtained by keeping cattle stalled and fed with provender brought to them. This is the great secret of the fertility of the once poor barren heaths of Holland. In different situations it may not be practicable to procure sufficient manure, at least at first, and the progress will be much slower. In this case, rye, clover, buckwheat, and other succulent plants, must be sown, and the crop ploughed in

when the blossoms begin to decay: potatoes and other roots may be raised, to be consumed by cattle and swine, in sheds built for the purpose near at hand, and every means that ingenuity can invent must be resorted to in order to make as much manure as possible by hauling leaves, &c. &c. This is not to be applied to the land at once, but mixed up in heaps with sods and parings of the surface with the ashes of roots burned, and with lime, and when thoroughly incorporated by frequent turning, mixing, and repeated watering with liquid manure, a good coat should be put on the land at once, as far as it will go: for *one acre brought into a tolerable fertile state will repay the cost better than many imperfectly improved;* and by proceeding gradually in this way, more land will be brought into a state fit for cultivation at the end of a few years, and at less expense than could have been done by beginning with too much at first.

Flowering of Plants.

The flowering of plants may be compared to the age of puberty in animals; and the laws which regulate its commencement, as well as its periodical returns in perennials, are sufficiently definite for each species, though liable to considerable modification under peculiar circumstances. An elevation of temperature, for instance, decidedly excites and accelerates the flowering propensity, whilst a superabundance of moisture counteracts and retards it. Hence it happens that when the fruits and vegetables of a temperate climate are cultivated within the tropics, although the increased temperature might dispose them to flower more freely, yet the moister atmosphere of those climates predetermines their running to leaf. Whatever, on the other hand, tends to check the luxuriance of vegetation, predisposes the plant to show more flower; and hence the effects of our winters are undoubtedly beneficial in allowing the sap time to be prepared for this important function, In India it is customary to uncover the roots of fruit trees during the violent heats, which causes the leaves to fall, and thus the effects of winter are artificially produced upon the constitution of the plant. The periodic return of the flowering season is sufficiently constant in each species, to be considered as a general law of vegetation; for although it is subject to modification from a variation in temperature, yet it is evidently dependent also on the idosyncracy of the individual. De Candolle mentions two contiguous trees in a row of horse chesnuts at Montpelier, one of which always flowered the earliest, and the other the latest of all the trees in the row. It is important, in an economic point of view, to note this variety in the periodic times of flowering in different individuals of the same species, since cultivators, by continually taking advantage of it, and so propagating from the earliest and latest of the same crop, may gradually obtain plants which will yield a much longer succession of flowers or fruit than could otherwise be obtained.

Improvement of Land.

Louisville, Ky., July 2, 1840.

E. J. Hooper, Esq.—Dear Sir,—Perceiving that you have become the editor of the Western Farmer, of which publication I am a subscriber, and with which I have been, so far, well pleased, permit me to make a few inquiries, for which I beg to solicit your early and kind attention. Although engaged in business in this city, I have a small place of about one hundred acres of land in this vicinity which I wish to improve; it lies twelve miles from here on the road to Frankfort. The land consists of a tough clayey soil, that has been much worn, generally rolling, with the exception of a portion of the woodland of about eight to ten acres, which is a low wet spot of beach woods. To improve the place I have thought of putting the latter in grass. What kind would you advise, and when to sow it? Are you acquainted with a kind called *Burden grass*, which I am told does the

best for wet land, is good for cattle, and grows with joints like stalks of corn I have been unable to hear of or procure any in this vicinity. My rolling land, (having about fifty acres cleared) I propose putting in rye this fall, and turning under for two years, in order to improve the soil. What do you think of this plan? The wet season has nearly destroyed all our rye in this and the adjoining counties. What are the prospects in your neighborhood, and at what price can the *present season crop* probably be bought at in your vicinity? I should also like to try some of it in a ten acre wood pasture I have on my place. Will you be so good as to give me a particular account how to manage, and what would be the best time to sow it.

I should be happy, and will endeavor to reciprocate the favor I ask of you, by my best endeavors to increase among my neighbors the subscription list to your valuable agricultural paper; and if I should not transgress too much on your valuable time, as early and as full an answer as you can make to the foregoing queries, would confer a favor on one who is beginning to be aware of the decided benefits and advantages attending the cultivation of the soil.

Yours, &c. C. E. Beymoth.

—

Answer to the Above.

I am not acquainted with the grass you speak of as *Burden* grass, but I presume it is probably the water-poa or reed meadow grass, (poa-aquatica) which is a hardy grass, yields a good burthen per acre, and it is readily eaten by most animals. There is a species of grass striped or what is called ribbon grass, which has been used in boggy lands in New Hampshire with good success. The poa-aquatica is described as one of the largest and most useful of British grasses. In England, immense tracts are spontaneously covered with this grass, which not only affords a rich pasturage for cattle in summer, but forms the chief part of their winter fodder. From its strong stem and upright growth, it is calculated to remain unhurt by inundation. It has a powerful creeping root, and will admit of frequent mowing. It flowers in June or July. I presume your wood tract is too shady for any but orchard or blue grass, and probably too much so for the latter. Your plan of putting your cleared clayey worn land in rye this fall to turn in green next spring, is a good one, and the most economical probably for improving it that you can adopt. You can have the benefit of the pasturage till late in the spring. If you should stand in need of the grain for the hogs, you might turn them into it when it is ripe next summer, and what would be wasted on the ground would still make another crop for next year, which you might at last turn in when green after again using it for pasturage. You would also have the benefit of having on your land all the manure from the animals you put on it—a great consideration. If you should wish to sow timothy or red clover, sow either of them from September to March; either, but particularly clover, will resuscitate land by turning them under after having had all the benefit you wish from them. But clay land is more suited to timothy than to clover. The rye crops have nearly all failed round here, and I suppose that grain will be dearer in proportion than other grain. It has been proved decidedly that rye will grow and flourish in pretty thick woods; it will even mature its grain in a little shade. It is very hardy, and makes a good wholesome bread. It seems almost a link between summer and spring pasturage, and if not allowed to ripen is very beneficial to the soil.

Live Stock.

It is continually a matter of the greatest astonishment to us, that farmers generally manifest so little anxiety to improve their stock. It is now in the power of a vast number of farmers to make a commencement in the improvement of their Cattle for beef, and probably for milk too, at an expense at most of about ten dollars, by patronizing the best bull of the Durham breed near to them. The farmers near Cincinnati, and in a great many parts both of Kentucky and Ohio, can avail themselves of the services of the several breeds of Sheep, consisting of the New Leicester, Bakewell, Cotswold, Southdown, and Saxony, alone or mixed with them and the Merino, either by sending to them or hiring them, at very moderate prices, from five to twenty dollars at most; and besides these, and above all, and what can be reached by every farmer, is to be derived from an improvement in the breed of Hoos, particularly of the Berkshire kind, but *any kind is better than the common Wood hog.* We have before pointed out to the public, entirely with a view to its benefit, Mr. C. S. Clarkson, near Cincinnati, and Mr. Geo. Smith, of Carthage, as possessing some of the finest cattle, sheep and swine of all the above breeds; we now, with the same object only, (for we do not advertise,) call the attention of the farmers of Ohio to the imported Berkshire Boar *Reading*, selected by S. Hawes, Esq., the original importer of this breed, which will stand at Mr. Jno. Reed's, near Middletown, at ten dollars per sow. This boar we distinctly understand has been purchased at a very high price for such animals,—near $300, including charge and transfer. We sometimes hear, with the greatest aston shment, although we ought not perhaps to wonder at any assertion without knowledge, some persons, and those even farmers, say, "As to the *breed* of hogs it is all nonsense; it is *corn* that makes the hog; give them plenty of this, and you will have pork enough." And is it possible then that a *farmer* can be so ignorant of the nature of animals, as not to know that there are some breeds of animals, especially hogs, now so improved as to possess a tendency to fatten to such a degree as to take less than half the food of the common breeds to put them in condition for killing. And is it a matter of small consideration with the farmer to obtain animals which, in comparison with other breeds, will enable him to make a saving of at least one half the food necessary to fit them for market, besides their arriving at comparatively a very early maturity, (for as to great size, that is not a matter of near so much moment as their other qualities,) and making much superior meat? We will say nothing of the symmetry and beauty of their forms, and their being more easily managed on account of their greater docility. Mr. Jas. Berry, near Newport, Ky., possesses the full blood of Berkshires, as well as a breed he calls the Fairfield, being a very valuable mixture of the Berkshire with an improved breed of his own from crosses with the Big China breed of hogs. (See his excellent letter on his experience with swine, in the last number of this work, No. 9.)

Now we trust we are the last persons in the world to recommend to the farmers speculations probably merely temporary, and which would benefit those only who have such things for sale; and even if we could surmount our conscientious scruples on the subject, we

have no interest to serve by such recommendations. We ourselves are only in the situation of a poor and limited farmer as to means and possession of improved stock, and we have not enough of them for our own use; but we are not so selfish as to wish to see others deprived of those means of which we can only partially avail ourselves. Because the Merino experiment almost entirely failed at the time, and the Morus Multicaulis speculation, owing to its fever heat for lucre, overreached its *illegitimate* as well as *legitimate* objects, together with some minor manias; yet both are now serving valuable purposes in a sober use of them. There will be failures and discomfitures in all human undertakings, but that is no reason why the general means of improvement should not be allowed to proceed, particularly in so fundamental and all-important a pursuit as that of agriculture. If the old are contented to stand still in love of ease and calmness, there is more excuse for them; but the young and ambitious, at any rate, should be ever striving towards perfection in all their undertakings.

Laconics for Farmers.

(To be continued every month.)

Hollow-horn.—Half a gill of spirits of turpentine poured between the horns, is both a preventive and cure for the hollow-horn in cattle.

Winter Food for Stock.—A horse requires near two tons of hay for a winter; an ox as much; a cow one ton and a half; and for twelve sheep, one ton and a half: provided they are not what is called *manger* fed three or four times a day with chopped food, when about two-thirds of the above quantity for each will be sufficient.

Summer Food for Stock.—Three acres are required in summer for pasture for a horse or an ox, even if changed; for a cow two and a half acres; and the same for summering 12 sheep. To grow clover, lucerne or tares for them on the soiling system, or cutting these and carrying them to the stable or yard where they are kept, will take rather less than one-fourth of the same quantity for each in proportion.

For Scour in Calves.—Pour into the food prepared two or three spoons full of *rennet*, such as is used in cheese-making, or give them a mixture of pulverized chalk and wheat meal made into balls with whiskey. *For costiveness*, give them pot liquor in which meat has been boiled.

To clean Hives.—Burn them out with straw. Rub them then with balm, and dip it in salt and water; rub the hive with it, inside and out, till the balm is worn out.

Ticks in Sheep.—Put Scotch snuff into the wool after opening it; make also a ring with it round the head, and another near the shoulders. Do it with a tin pepper box; have it made shaped like a funnel, with five very small holes at the little end of the cap; fill it with snuff.

Purple Cape Brocoli—The only sort worth cultivating in this country.—Sow about the middle of May—not before—transplant in a month, in very rich ground, two and a half feet apart. They will begin to form heads the latter end of August. A little frost will not injure them. *The seed cannot be raised in this country.*

Caking of the Bag or Udder.

In newly calved cows, the udder sometimes hardens or cakes, (as it is called,) and a remedy should be applied without delay. One of my cows, in this condition, was lately treated with *soft soap* or *lard*, externally applied in the evening, and the next morning she was well. I have heard no complaint of her since.